WHAT IS CLAIMED IS:

1. A method of ablating cardiac tissue, comprising the steps of:

providing an ablating device having an ultrasonic transducer, the device emitting focused ultrasound which is focused in at least one dimension;

positioning the ablating device in contact with cardiac tissue; and

activating the ultrasonic transducer to direct the focused ultrasound into the cardiac tissue.

2. The method of claim 1, wherein:

the activating step is carried out to electrically isolate one part of the heart from another part of the heart.

3. The method of claim 1, wherein:

the providing and activating steps are carried out with the focused ultrasound being focused along a focal axis and diverging when viewed perpendicular to the focal axis.

4. The method of claim 1, further comprising the step of:

moving a focus of the focused ultrasound relative to the cardiac tissue.

5. The method of claim 4, wherein:

the moving step is carried out to move the focus closer to a near surface of the cardiac tissue.

6. The method of claim 1, wherein:

the providing step is carried out so that at least 90% of the focused ultrasound passes within a focus area defined by a focal length of about 2 to 20 mm and an angle of about 10 to 170 degrees when viewed along a focal axis.

7. The method of claim 1, wherein:

the providing step is carried out with the focused energy being emitted by a concave surface.

8. The method of claim 1, wherein:

the providing step is carried out with the concave surface being attached to a piezoelectric transducer.

9. The method of claim 7, wherein:

the providing step is carried out with the concave surface having a focal length of 2-20 mm.

10. The method of claim 9, wherein:

the providing step is carried out with the focused energy having a focal length of 2 to 12 mm.

11. The method of claim 1, wherein:

the activating step is carried out by activating the ultrasonic transducer for a first period of time at a first frequency and a second period of time at a second frequency which is different than the first frequency and occurs after the first period of time.

12. The method of claim 11, wherein:

the activating step is carried out with the first frequency being lower than the second frequency.

13. The method of claim 12, wherein:

the activating step is carried out with the first period of time being shorter than the second period of time.

14. The method of claim 13, wherein:

the activating step is carried out with the first period of time being less than 1 second.

15. The method of claim 11, wherein:

the activating step is carried out with the ultrasonic transducer being activated at the first frequency for a number of discrete time periods.

16. The method of claim 15, wherein:

the activating step is carried out with the ultrasonic transducer being inactive for 3-8 seconds between each of the number of discrete time periods.

17. The method of claim 1, further comprising the step of:

approximating a temperature of the tissue.

18. The method of claim 1, further comprising the step of: assessing the adequacy of contact between the device and the tissue.

19. The method of claim 1, further comprising the step of: determining a tissue layer thickness using the ultrasound transducer.

20. The method of claim 19, wherein: the determining step is carried out with the tissue layer being a tissue layer between a near surface and a far surface.

21. The method of claim 19, wherein: the determining step is carried out with the tissue layer being a fat layer which lies over a muscle layer.

22. The method of claim 1, further comprising the step of: measuring a blood flow velocity with the ultrasonic transducer.

23. The method of claim 1, further comprising the step of: moving the a focus of the focused ultrasound relative to the tissue.

24. The method of claim 23, wherein: the moving step is carried out with the ultrasonic transducer being tilted.

25. The method of claim 1, wherein: the providing step is carried out with the ablating device having a number of ultrasonic transducers.

26. A method of ablating tissue with ultrasound comprising the steps of: providing an ablating device which emits focused ultrasound having a focus in at least one direction; positioning the ablating device in contact with a tissue structure to be ablated; and operating the ablating device at a frequency and a power to direct the ultrasonic energy into the tissue structure for a period of time; and changing at least one of the frequency, power, period of time and location of the focus relative to the tissue and activating the ablating device.

27. The method of claim 26, wherein:

the changing step is carried out to accumulate energy closer to a near surface of the tissue as compared to the operating step.

28. The method of claim 26, wherein:

the changing step is carried out with the period of time increasing.

29. The method of claim 26, wherein:

the changing step is carried out with the frequency increasing.

30. The method of claim 26, wherein:

the providing step is carried out with the ultrasonic transducer producing focused ultrasound, wherein the focused ultrasound has a focal length of 2-20mm.

31. The method of claim 1 or 26, further comprising the step of:

assessing the contact between the ablating device and the tissue structure.

32 . The method of claim 31, wherein:

the assessing step is carried out by measuring the electrical impedance.

33. The method of claim 1 or 26, further comprising:

measuring a tissue thickness using the ultrasonic transducer, the ultrasonic transducer emitting ultrasound energy and receiving ultrasound energy reflected from a far surface of the tissue structure.

34. The method of claim 1 or 26, further comprising the step of:

measuring a fat thickness using the ultrasonic transducer, the ultrasonic transducer emitting ultrasound energy and receiving ultrasound energy reflected from a boundary between fat and muscle.

35. The method of claim 26, wherein:

the operating step is carried out a number of times.

36. A method of ablating a tissue structure with ultrasound comprising the steps of:

providing an ablating device which emits ultrasound energy;

activating the ablating device to deliver and accumulate energy within a target tissue structure; and

changing a characteristic of the ablating device so that the ultrasound energy is accumulated nearer to a near surface of the target tissue structure as compared to the activating step.

37. The method of claim 36, wherein:

the providing step is carried out with the ablating device having a number of cells with each cell having at least one ablating element which emits ultrasound energy.

38. The method of claim 36, wherein:

the providing step is carried out with the ablating device emitting focused ultrasound which is focused in at least one dimension.

39. The method of claim 38, wherein:

the activating step is carried out to accumulate energy at a focus of the focused ultrasound; and

the changing step is carried out to accumulate energy between the focus and a near surface of the target tissue structure.

40. A method of ablating cardiac tissue, comprising the steps of:

providing an ablating device having an ultrasonic transducer;

positioning the ablating device in contact with a tissue structure to be ablated; and

activating the ultrasonic transducer for a first period of time at a first frequency to produce ultrasonic energy which is directed at the tissue structure, the activating step also being carried out with the ultrasonic transducer being activated for a second period of time at a second frequency which is different than the first frequency.

41. The method of claim 40, wherein:

the activating steps are carried out with the first frequency being lower than the second frequency and the first period of time occurring before the second period of time.

42. The method of claim 40, wherein:

the activating steps are carried out with the first period of time being shorter than the second period of time.

43. The method of claim 40, wherein:
the activating steps are carried out with the first period of time being less than 1 second.

44. The method of claim 43, wherein:
the activating steps are carried out with the ultrasonic transducer being activated at the first frequency a number of times.

45. The method of claim 44, wherein:
the activating step is carried out for the first period of time.

46. The method of claim 40, wherein:
the activating step is carried out with the ultrasonic transducer being activated at the first frequency for a number of discrete time periods.

47. The method of claim 40, wherein:
the activating step is carried out by activating the ultrasonic transducer at a third frequency different than the first and second for a third period of time.

48. The method of claim 40, wherein:
the activating step is carried out with the first frequency being about 2-7 MHz and the second frequency being from 2-14 MHz.

49. The method of claim 40, wherein:
the providing step is carried out with the ultrasonic energy delivered to the tissue is a focused energy which is focused in at least one dimension.

50. The method of claim 49, wherein:
the providing step is carried out with the focused energy having a focal length of 2 to 20 mm.

51. The method of claim 49, wherein:
the providing step is carried out with a concave surface being ultrasonically coupled to the transducer to form the focused energy.

52. The method of claim 40, further comprising the step of: approximating a temperature using the ultrasonic transducer.

53. The method of claim 40, further comprising the step of: assessing the adequacy of contact between tissue and the device.

54. The method of claim 40 further comprising the step of: measuring a blood flow velocity with the ultrasonic transducer.

55. The method of claim 40, further comprising the step of: determining a tissue layer thickness using the ultrasound transducer.

56. The method of claim 55, wherein: the determining step is carried out with the tissue layer being a tissue layer between a near surface and a far surface.

57. The method of claim 40, further comprising the step of: moving the ultrasonic beam after the activating step.

58. The method of claim 57, wherein: the moving step is carried out with the ultrasonic beam being rotated.

59. The method of claim 57, wherein: the moving step is carried out by moving the ultrasonic transducer.

60. The method of claim 57, wherein: the moving step is carried out with the ultrasonic transducer being tilted.

61. The method of claim 1, wherein: the providing step is carried out with the ablating device having a number of ultrasonic transducers.

62. The method of claim 1, wherein: the providing step is carried out with the ultrasound transducer having a relatively flat surface and a curved member coupled to the flat surface, the curved member transmitting ultrasound energy from the transducer to form the focused energy.

63. A method of ablating cardiac tissue, comprising the steps of:

providing an ablating device having an ultrasonic transducer;

positioning the ablating device in contact with a tissue structure to be ablated; and

activating the ultrasonic transducer for a first period of time at a first power to produce ultrasonic energy which is directed at the tissue structure, the activating step also being carried out with the ultrasonic transducer being activated for a second period of time at a second power which is different than the first power.

64. The method of claim 63, wherein:

the activating step is carried out with the ultrasonic transducer being activated at different frequencies during the first and second periods of time.

65. The method of claim 63, wherein:

the activating step is carried out with the first period of time being smaller than the second period of time.

66. The method of claim 65, wherein:

the activating step is carried out with the first power being higher than the second power.

67. A device for ablating tissue, comprising:

a body having a longitudinal axis and a contact surface configured to be positioned adjacent tissue to be ablated;

a first transducer coupled to the body;

a second transducer coupled to the body and spaced apart from the first transducer by a space; and

wherein at least one of the first and second transducers directs ultrasound energy to tissue lying beneath the space between the first and second transducers.

68. The device of claim 67, wherein:

both the first and second transducers direct ultrasound energy to tissue lying beneath the space between the first and second transducers.

69. The device of claim 67, wherein:

a flexible membrane extends over the at least one of the first and second transducers, the flexible membrane conforming to the surface of the tissue and being filled with a substance which transmits the ultrasound energy from the transducer to the tissue.

70. The device of claim 67, wherein:

the first and second transducers have the same shape, the first and second transducers each directing ultrasound energy to tissue beneath the first and second transducers, respectively, and the first and second transducers also directing ultrasound energy to tissue lying beneath the space between the first and second transducers.

71. A device for ablating cardiac tissue, comprising:

a body having a longitudinal axis and a contact surface configured to be positioned adjacent tissue to be ablated;

a first transducer coupled to the body;

a second transducer coupled to the body and spaced apart from the first transducer by a space, wherein the first and second transducers each emit ultrasound energy to the tissue to be ablated; and

means for changing the direction of the ultrasound energy from the first transducer toward tissue beneath the gap between the first and second transducers.

72. The device of claim 71, further comprising;

an inflatable membrane positioned beneath the first transducer to form the contact surface below the first transducer, the transducer moving upon inflation of the balloon.

73. A method of ablating cardiac tissue, comprising the step of:

providing an ablating device including a body having a longitudinal axis and a contact surface, the ablating device also having a first transducer and a second transducer both coupled to the body, the second transducer being spaced apart from the first transducer by a gap, wherein the first and second transducers each emit ultrasound energy to the tissue to be ablated, the first transducer being movable to redirect the energy emitted by the first transducer to tissue beneath the gap between the first and second transducers;

positioning the ablating device against cardiac tissue;

activating the first and second transducers to ablate cardiac tissue:

moving the first transducer to ablate cardiac tissue beneath the gap between the first and second transducers.

74. The method of claim 73, wherein:

the providing step is carried out with the body having an inflatable membrane beneath the first transducer; and

the pivoting step is carried out by inflating the balloon.

75. A method of ablating a cardiac tissue, comprising the steps of:

providing an ablating device having a first transducer and a second transducer;

positioning the ablating device against cardiac tissue;

activating the first transducer at a first frequency to ablate cardiac tissue; and

activating the second transducer at a second frequency to ablate cardiac tissue.

76. The method of claim 75, further comprising the step of:

moving the ablating device so that the activating steps are carried out to ablate the same cardiac tissue.

77. The method of claim 75, wherein:

the activating steps are carried out to ablate different cardiac tissue.

78. The method of claim 75, further comprising:

characterizing at least a portion of the cardiac tissue; and

selecting at least one of the first and second transducers to ablate the at least portion of the cardiac tissue based upon the characterizing step.

79. A method of ablating a cardiac tissue, comprising the steps of:

providing an ablating device having a first transducer and a second transducer, the first and second transducers both being focused, the first and second transducers having different focal lengths;

positioning the ablating device against cardiac tissue;

activating the first transducer to ablate cardiac tissue; and

activating the second transducer.

80. The method of claim 79, wherein:

the providing step is carried out with the first transducer having a first focal length and the second transducer has a second focal length different than the first focal length.

81. The method of claim 79, wherein:

the providing step is carried out with the ablating device having a body, the first and second transducers being movable along the body.

82. The method of claim 81, wherein:

the providing step is carried out with the first and second transducers being slidable along the body.

83. The method of claim 81, further comprising the step of:

positioning the body at a selected location on an epicardial surface; and

moving the first and second transducers after the positioning step.

84. A device for ablating tissue, comprising:

a body;

a source of focused ultrasound mounted to the body, the focused ultrasound having a focus; and

a flexible membrane filled with a substance which receives the focused ultrasound and transmits the ultrasound energy to the tissue.

85. The device of claim 36, wherein:

the flexible membrane is inflatable to move the focus relative to the tissue to be ablated.

86. The device of claim 36, wherein:

the flexible membrane tilts the body when inflated.

87. The device of claim 36, wherein:

the source of focused ultrasound includes an ultrasound transducer.

88. A system for ablating tissue with ultrasound energy, comprising:

an ablating element which emits ultrasound energy;

a control system coupled to the ablating element. the control system controlling activation of the ablating element to automatically change a characteristic of the ablating element when ablating the same tissue structure during a first time period and a second time period.

89. The system of claim 88, wherein:

the control system is configured to automatically change a frequency of the ablating element.

90. The system of claim 88, wherein:

the control system is configured to automatically change the power of the ablating element.

91. The system of claim 88, wherein:

the ablating element emits focused ultrasound which is focused in at least one direction.

92. The system of claim 88, wherein:

the control system automatically moves the focus relative to the tissue structure being ablated.

93. The system of claim 92, wherein:

the control system moves the focus closer to a near surface of the tissue structure being ablated.

94. The method of claim 88, wherein:

the control system includes means for assessing the adequacy of contact between the device and the tissue structure being ablated.

95. The method of claim 93, wherein:

the assessing means is carried out by measuring an electrical impedance.

96. A device for ablating tissue, comprising:

a body;

a first ablating element coupled to the body, the first ablating element emitting focused ultrasound energy, the focused ultrasound energy being focused in at least one direction; and

a second ablating element coupled to the body, the second ablating element emitting focused ultrasound energy, the focused ultrasound energy being focused in at least one direction, the second ablating element being different than the first ablating element.

97. The device of claim 96, wherein:

the second ablating element has a different focal length than the first ablating element.

98. A device for ablating cardiac tissue, comprising:

an ablating element which emits focused ultrasound which is focused in at least one dimension.

99. The device of claim 98, further comprising:

a body; and

a plurality of ablating elements.

100. The device of claim 98, wherein:

the focused ultrasound is focused along a focal axis and diverges when viewed perpendicular to the focal axis.

101. The device of claim 98, further comprising:

means for moving a focus of the focused ~~ultrasound~~ relative to the tissue.

102. The device of claim 98, wherein:

the focused ultrasound has a focal length of 2-20 mm.

103. The device of claim 102, wherein:

the focal length is 2 to 12 mm.

104. The device of claim 98, further comprising:

a control system which automatically activates the ablating element for a first period of time at a first frequency and for a second period of time at a second frequency which is different than the first frequency.

105. The device of claim 104, wherein:

the control system activates the ablating element at the first frequency which is lower than the second frequency.

106. The device of claim 104, wherein:

the control system deactivates the ablating element for 5-80 seconds between each of a number of discrete time periods.

107. A system for ablating tissue with ultrasound comprising the steps of:

an ablating device which emits focused ultrasound in at least one dimension; and

a control system operably coupled to the ablating device, the control system activating the ablating device at a frequency and a power to direct the ultrasonic energy into the tissue structure for a period of time, the control system also changing at least one of the frequency, power, period of time and location of the focus relative to the tissue.

108. The system of claim 107, wherein:

the changing step is carried out to accumulate energy closer to a near surface of the tissue as compared to the operating step.

109. The system of claim 107, wherein:

the changing step is carried out with the period of time increasing.

110. The system of claim 107, wherein:

the changing step is carried out with the frequency increasing.

111. The system of claim 107, further comprising:

means for assessing the contact between the ablating device and the tissue structure.

112. The system of claim 107, further comprising:

means for measuring a tissue thickness using the ultrasonic transducer.

113. The system of claim 107, wherein:

the first transducer has a first focal length and the second transducer has a second focal length different than the first focal length.

114. The system of claim 107, wherein:

the ablating device has a body, the first and second transducers being slidably movable along the body.

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